

Bullard. (Wm. N.)

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Febrile Delirium Tremens

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CASES OF FEBRILE DELIRIUM TREMENS.¹

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THE existence of certain specially dangerous and hyperacute forms of delirium tremens has been known and recognized by many writers since the days of Magnus Huss, but the first distinct description of this class of cases in which an attempt at their differentiation from the ordinary type was made, seems to have been that of Delasiauve, of his so-called superacute form (*forme suraigue*) in 1852. In his cases, however, the distinctive symptom of fever was absent, and it was left for Magnan, in 1873 and 1874, to describe as a distinct variety, his cases of febrile delirium tremens.

Although the cases which I am about to report do not agree in all respects with those related by him, I have ventured to make use of the title of febrile delirium tremens for them also. One of the predominant symptoms, perhaps we may even say their most striking characteristic, was the presence of fever, and in many points they closely resemble the cases of Magnan. Moreover, there can be little doubt that the different varieties of delirium tremens shade imperceptibly into each other and that they are all acute manifestations of chronic alcoholism modified in their symptoms by the constitution of the patient, his con-

¹ This paper was read in substance at a meeting of the Medico-Psychological Society on the 19th of May, 1887, but the title, according to a proviso made at the time, has been changed, and certain additions and modifications have been made.

dition at the time, the existing complications and various other attending circumstances.

The presence, however, of so important a symptom as fever, affords, in our opinion, a sufficient ground for placing those cases in which it exists to any marked degree, in a separate category from the ordinary simple afebrile cases. Since, after as thorough an examination as possible of the voluminous literature of delirium tremens, we have found no carefully reported cases of this character, since those of Magnan, we feel justified in bringing these to the notice of the Society, more especially as we believe that there are certain considerations connected with them of considerable importance both to the specialist and perhaps even more to the general practitioner.

The first case which I shall present, is as follows :

On the 24th of September, 188-, the patient, a professional man, aged thirty-two, entered the Hospital under my charge. The following history was obtained from his relatives and friends, partly at the time and in part later.

Family history entirely negative. When about fifteen or sixteen years old, patient had some mental trouble and was sent to the McLean Asylum for a time. He recovered from this perfectly, was afterwards healthy and an exceptionally bright and intelligent student. For several years previous to entrance he had been addicted to the use of alcohol in excess and about four years previously was sent as a patient to the City Hospital, suffering from delirium tremens. Since then he had been under the influence of alcohol much of the time, but his family state that for the four weeks preceding admission to the Hospital, he has had only one bottle of ale per diem, and nothing else. For some time he has been thought to have been a little "queer," but this was first noticed

by the family four weeks ago, when he came to live with them. It was then perceived that at times he did not seem to realize where he was, and he would frequently make remarks which had no apparent connection with the conversation or with his surroundings at the time. He had distinct hallucinations of sight and hearing and spoke, for example, of hearing his mother sing, she having died some time previously. He appears at this time to have used some morphine, but not any large amount. These symptoms gradually increased in severity, and he was brought to the Hospital on their account.

When first seen by me on the day after entrance, he was sitting up, recognized the people whom he had previously known and talked rationally during the visit, though he did not know where he was and was easily confused. He was markedly weak and languid, complained of no pain, but of discomfort in his head. Face flushed; lips dry and cracked. Pulse 120, weak.

R Ammon. Carbon. . . . grs. v, t. i. d.

On the day following (September 26th), the patient was decidedly worse. He was almost unable to recognize friends or to answer questions, and was confined to bed, being too weak to stand. The bowels were somewhat constipated; there was no headache or vomiting.

September 27th. In bed. Pulse stronger, 110. Has distinct delusions of sight and hearing. Talks steadily to imaginary persons. Talks to physician as though he were some one else. Physical examination gives negative results.

September 28th. Was to-day ordered whiskey $\frac{3}{4}$ ss. on account of weakness of pulse. Otherwise has had no alcoholic stimulant since entrance.

September 29th. Patient is now in a distinctly ty-

phoidal condition, face much flushed, tongue, which when first seen, had a thick white coat, has now a dry yellow coating and is cracked and parched. Lips covered with sordes. Pupils alike, normal, react fairly. Temperature has been 99° in the mornings and rose in the evenings to about 102° . Pulse 120, a little stronger. Bowels moved freely yesterday. Nothing abnormal detected in the urine.

He is now in a state of muttering delirium, plucks constantly at the bed-clothes, yet he recognizes people, at least partially, when asked who they are. Has been so restless at night that he had to be held in bed. Takes his food (milk) well.

Patient was seen to-day by Dr. Jelly in consultation, and a provisional diagnosis of subacute cerebral meningitis was suggested. An ice-bag was ordered to the head, and iodide of potassium (gr. xv, t. i. d.), and bromide of potassium (gr. xx, t. i. d.), prescribed. The carbonate of ammonium was omitted, but renewed the next day.

September 30th. Found patient this morning in a semi-comatose condition, after a somewhat restless night. He could be roused only with considerable difficulty and then recognized physician. The power of recognition varies according to his condition at the moment; on the 27th he did not recognize his brother. Pulse more feeble, 120. Temperature morning and evening normal. Pupils both dilated, right smaller than left; both react to light. Later in the day the pulse became more rapid, 128, scarcely perceptible at the wrist, and ammonia was given subcutaneously. Retention of urine, so that catheter was required.

After this, through change of service, the patient passed under the care of Dr. G. M. Garland, to whose courtesy I am indebted for permission to make use of the Hospital records relating to this patient while under his charge.

October 1st. Temperature this morning 99° ; pulse regular, 128, soft and feeble. Complains a little of acute lancinating pain in the head. Imagines that people are pursuing him, and tries to run away from them. Mutters a good deal and talks thickly. Knew the physician and called him by name, then became confused. Fumbling of the bed-clothes. Urine passed involuntarily. Tongue very red, dry in the centre, secretions of mouth thick and adherent to gums. Conjunctivæ pale, pupils equally dilated, no photophobia, convergence good, hearing perfect, no sensitiveness to sounds. Cheeks and superciliary regions congested. Tache cérébrale slightly marked.

Was ordered carbonate of ammonia, digitalis, and gelseminum. The iodide and bromide were omitted. Beef-tea.

October 3d. Slept four or five hours last two nights. Dejections following enemata each day. Urine passed voluntarily for first time to-day, patient demanding urinal. Quiet, not anxious to get out of bed, but very emotional, talking and crying a great deal; wanders constantly in mind. Tongue, yesterday, moist, soft, slightly coated. Evening temperature (yesterday), however, rose to 101.3° . Temperature to-day, A. M., 98.8° ; P. M., 102° . Pupils react equally to light. Borborygmus on pressure.

October 4th. Three large, soft dejections last night; one in bed. Temperature this morning, 101.8° , pulse 120. Urine high-colored; is passed involuntarily. Evening temperature, 100.8° .

October 9th. Is still very stupid and almost unconscious, although he protrudes tongue when asked. Has had diarrhœa for two or three days; defecation and micturition involuntary. Nourishment consists chiefly of milk; takes whiskey.

October 11th. Much more conscious of surround-

ings. Pulse and temperature more nearly normal. Tongue moist; very slight coat.

October 14th. Yesterday, was wildly delirious, constantly talking to imaginary persons, but not in a frightened way, as previously. Slept poorly last night. To-day, is more sensitive to external influences and talks easily, though wandering in mind.

October 21st. Appears much better to-day. Tongue still red, dry, and fissured in the centre, moist on the edges. Fans himself, and talks of the "mugginess" of the atmosphere.

November 7th. Is much better. Has been able to sit up for the last few days.

November 10th. Well enough to go out-of-doors.

November 12th. Discharged on request.

The patient was transferred to the City Hospital, service of Dr. C. F. Folsom, to whose kindness I am indebted for the following notes:

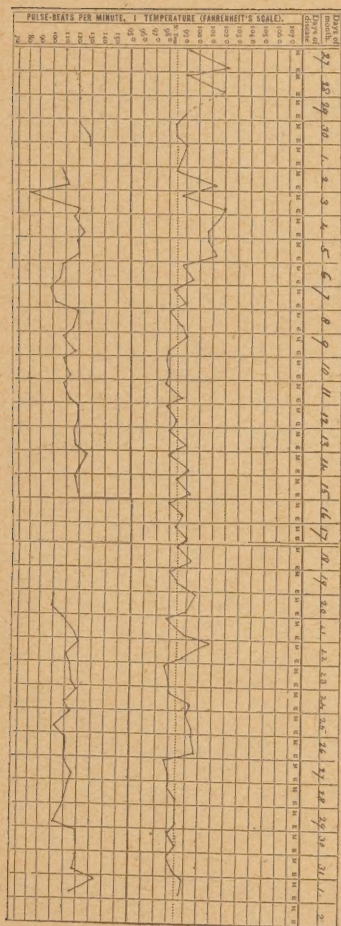
On entrance, was so delirious that no history could be obtained. Very restless, constantly getting out of bed. Does not recognize those about him but supposes them to be other persons.

Tremor of tongue and limbs. Right pupil slightly larger than left; reactions of both to light sluggish. Well-marked atrophy of both optic discs. Is unable to stand with eyes closed. Marked loss of power of hands. P. R. exaggerated. Speech thick, indistinct. Pulse 100, respiration 24.

Was discharged two days later on request, not relieved.

He is believed to have been sent later to Danvers for a time, but he ultimately recovered — at least, to a considerable extent — and within a year had resumed, in part, the practice of his profession.

In this case we have a man of thirty-two, with a distinct predisposition to mental disease, and addicted



for a considerable period to the excessive use of alcohol. Having continued the abuse of the stimulant after, at least, two attacks of delirium tremens, he finally, four weeks before entering the Hospital, and probably much earlier, is perceived to act in a strange manner, to have temporary lapses of memory, and hallucinations of sight and hearing. On entrance, he is found to be much in the condition of a patient recovering from a severe attack of delirium tremens — weak, with decided tremor of face and hands, and mentally affected, unable to realize his surroundings. Very shortly, *fever* was detected, and, instead of improving, he grew rapidly worse. The general weakness increased,

and was accompanied by very marked and constant subsultus tendinum, and by continual plucking at the bed-clothes. The tongue was cracked, dry, and parched, and the general condition suggested that of typhoid fever. Mentally, he likewise became worse, having constant, rapidly-changing hallucinations, many of them terrifying and horrible, but many also, and the proportion of these increased as the disease progressed, of a not unpleasant character. He constantly imagined that he saw friends and acquaintances, who spoke and chatted with him. He talked aloud much of the time, often starting up suddenly and answering some subjective question. This condition of things continued for a month, being varied by periods of semi-coma, when he could with difficulty be roused to answer questions. The fever ceased at one time, to recur later. At the end of a month his strength had improved, and there were no acute symptoms remaining. From this time his mental condition improved until he left the Hospital, only to grow worse afterwards, and to necessitate a still longer treatment before final recovery. (See temperature chart).

In this case, there is little doubt that there existed in the beginning that condition of chronic alcoholic poisoning so carefully described by Lentz, under the title of chronic hallucinatory alcoholism. This, possibly due to the withdrawal of stimulants, passed soon into an acute febrile condition, recurrent, and lasting about a month, to be followed in its turn by the ordinary hallucinatory alcoholic insanity (Magan's third form of alcoholic insanity).

The second case I have to relate is that of a liquor-dealer, thirty-two years of age, a native and resident of Boston. He entered the Carney Hospital, June 5, 1886, in the service of Dr. Ferguson, to whose kind-

ness I am indebted for permission to make use of the records.

Previous history, obtained from friends: One of the patient's uncles was insane for a time, and at the Worcester Asylum for six months. No record of any other mental or nervous affection in the family obtained.

Patient had been healthy, except as follows: He has been a constant drinker for two or three years, and at times has drunk very heavily. Last autumn, he had several epileptic fits, and he has fallen down stairs several times. Two weeks before entrance, he stopped the use of alcohol entirely for five days, but then resumed. He was at this time placed under the care of a physician, as he had begun to have hallucinations of sight, and was rapidly growing worse. Finally, being inclined to be violent, he was brought to the Hospital.

Present condition: On entrance, he appeared rational, but very nervous. There was tremor of the hands, and the patient was very weak, unable to remain standing. When put to bed, he plucked constantly at the bed-clothes — a prominent symptom all through his illness. A few hours after arrival he became quite delirious, having hallucinations of sight, and talking aloud in a disconnected manner.

Was ordered capsicum and a mixture of bromide and chloral.

June 7th. Quite delirious; slept about half an hour last night.

June 12th. Has been in a constant state of delirium, with hallucinations. Much plucking at the bed-clothes. Sleep poor; none last night. Bowels free. Takes nourishment well (beef-tea, milk, egg-nogg).

June 17th. The daily record shows but little change. He seems to understand something at times. When asked where he was, he replied, "in bed";

and, on being requested to repeat the answer, spelt "in b-e-d."

June 20th. Asked where he was last night, and, on being told, seemed greatly troubled, but soon forgot.

June 23d. Condition unimproved.

July 1st. Service of Dr. Bullard. When I first saw this patient, a few days previous to the beginning of my term of service, he was lying in bed, muttering or talking to himself, with evident hallucinations of sight and hearing. He was very restless, plucking constantly at the bed-clothes. The physical examination revealed nothing abnormal anywhere. The temperature was about 100° most of the time (most unfortunately the temperature-charts have been lost). Pulse rapid, feeble. Examination of the urine gave negative results.

The weakness, temperature, and general typhoidal condition of the patient made us suspicious of some complication, as typhoid fever or pneumonia, but repeated and careful examinations gave no evidence in favor of either. There were no symptoms referable to the chest, and no abnormal physical signs in the lungs. There was no tympanites or abdominal tenderness; no rose spots. The bowels were regular.

July 4th. Temperature 100° , pulse 120. Condition unchanged.

July 6th. Temperature 99° , pulse 108. First sound over the aorta loud and clicking; second sound not heard there. Other cardiac sounds normal; no souffle.

R Tr. Digitalis m vii, t. i. d.

July 7th. Intelligence somewhat better. On the 5th, he used the stool for the first time: he had previously passed everything in bed. He now seems to understand questions a little better.

About this time, the patient was seen in consultation by Dr. Jelly, in order to determine the question of appointing a trustee for his property. Decision negative.

July 8th. Temperature 99° yesterday, 98.8° to-day ; pulse 120 each day.

July 12th. No change. Patella-reflex doubtful ; no ankle clonus. Fibrillary tremor of tongue.

July 15th. Is always worse in the afternoons, and during the last two has been so restless that he had to be kept in bed by force. He thinks that everything is on fire, and that he is being robbed, poisoned, etc.

July 17th. Constant attempts to get out of bed. Cannot be left alone for a moment.

July 25th. Intelligence much improved. Much more quiet.

July 28th. Knows physicians ; calls them by name, and seems to realize that he is recovering from a severe illness.

August 4th. Seems to have his senses in full. Can talk intelligently, and knows all about his business affairs.

August 9th. Has improved steadily, and was, to-day, discharged.

In both the preceding cases we have to deal with patients in whom, we may presume, a certain tendency to mental disease exists. One had already himself been in an asylum ; the other had had a near relative in one. In both, the existing affection was undoubtedly induced by addiction to the excessive use of alcohol. The more prominent and noteworthy symptoms in these cases may be resumed as follows: (1) The duration of the disease, followed in both cases by recovery, in connection with (2) the peculiar temperature, rising at times to 102° or more ; (3) the great weakness of the patient, especially in the earlier

stages; (4) the typhoidal appearance; (5) the constant subsultus tendinum, and the plucking at the bed-clothes; and (6), which is less uncommon, the long duration of the peculiar form of delirium, which, in the beginning, precisely resembled that of delirium tremens, but continued for weeks, with a gradual change to less terrifying hallucinations.

I will not enter here into the question of the differentiation of these cases from typhoid fever and other diseases, but will merely say that in the cases related there did not exist any of the more diagnostic symptoms generally seen in typhoid fever, except the general typhoid-like condition of the patient, and that in both cases the course of the temperature was unlike that usual in typhoid.

The medico-legal importance of such cases as these seems to me considerable. In both the preceding Dr. Jelly kindly consented to see the patients with me, in order to confirm my diagnosis, and to decide whether the patients were actually insane, and likely to remain so for a considerable period of time or whether the condition was a more or less temporary one, and the patient had a fair chance of recovery. In the first case, the actual question to be decided was whether the patient should at once be committed to an asylum, or whether it were advisable to wait; in the second, whether the patient was likely to remain in his actual condition so long that it was right and advisable that his property should be put in trust. In both cases the decision was in the negative, and rightly so.

I cannot help feeling, for these reasons, that it is very important that this class of cases should be early recognized, not only by specialists, many of whom have, undoubtedly, opportunities for observing them more or less often, but also by the general practitioner, into whose hands they, in the beginning,

almost always fall. All the cases of this character that I have seen, or have been able to find accounts of up to the present time, have either been fatal within a few days, or have ended in recovery. At any rate, if death does not occur within ten days, the prognosis is more favorable than one would be led to suppose by simple consideration of the duration and **character of the symptoms.**

In regard to the pathology of these cases, although data sufficient to justify a decided opinion are wanting, certain facts bearing on this subject may be mentioned. Without entering into detail in regard to the pathological changes of the nervous centres, and their envelopes in alcoholism, we may refer to a few general results. Fournier states that autopsies after *acute alcoholism* in man show most commonly the following lesions: "cerebral congestion, more or less intense; meninges injected, veins and vessels of the pia mater gorged with blood, cerebral substance dotted with points, roughened (*sablé*), and, on section, permitting the escape of fine drops of blood; sometimes, also effusion of serum into the meninges."

In chronic alcoholism we find two classes of lesions in these organs: the one, which may fairly be classed as acute, though the result of chronic changes, comprising, for example, hæmorrhages, and perhaps some effusions; the other class, the subacute and chronic. Audhoui, writing in 1868, says: "There is no need, I think, of insisting on the form that the nutritive trouble affects in the nervous centres, thickening of the meninges, the production of false membranes on the cranial dura mater, adherence of the pia mater to the cerebral cortex, hypergenesis of the neuroglia, fatty degeneration of the nerve-cells, of the capillaries, etc.; all this is perfectly well known." We will only mention the names of Mann, Thompson, Potain, Ba-

rella, among the many who have written on this subject.

Vulpian, in his "Clinique Médicale de l'Hôpital de la Charité," speaks as follows: "The pathological lesions (of chronic alcoholism) are, to-day, well known: they affect at the same time the meninges and the nervous centres. The lesions of the meninges are shown by thickenings, opacities, adhesions, etc.; those of the nervous centres by increase of the interstitial tissue, by destruction of the parenchyma, etc."

For a thorough and detailed description of the pathological anatomy of the nervous system in chronic alcoholism, we would, however, refer the reader to Lentz's book, "De l'Alcoolisme." In this the whole subject is carefully considered, and everything known at that time (1884) is stated. All pathological changes in chronic alcoholism may be referred to one of three distinct processes — circulatory troubles (congestion and inflammation), interstitial modifications (sclerosis), and fatty degenerations (steatosis).

In regard to the superacute form of delirium tremens we may mention two varieties, the "forme suraigue" of Delasiauve, and the delirium tremens fébrile of Magnan. The adynamic form mentioned by Krafft-Ebing is probably only the secondary stage of the more violent forms. Krafft-Ebing refers Magnan's variety to delirium acutum.

Delasiauve's form is described by Lentz as follows: "The forme suraigue of Delasiauve is remarkable particularly for its violence, its agitation, the intensity of the delirium and the gravity of the general condition. The nervous activity is prodigious: the patient has neither respite nor repose, no part of his body is free from movement; his face bloated, red, even violet, is contorted through the quivering of the muscles; his

eyes roll in their orbits; his skin hot and burning, is moist with a profuse and sticky sweat, which sometimes emits an alcoholic odor. The tongue may preserve its natural moistness; more often it is dry along the edges, and its surface as well as the edges are covered with fuliginous crusts. Usually the thirst is excessive, unquenchable; the respiration more or less labored; the alteration of the features indicates a profound prostration. As to the pulse, sometimes rapid and feeble, at other times it contrasts by its almost normal rhythm with the other symptoms. The mind is assailed by hallucinations whose rapid succession causes an incessant change. The words crowd each other so in the patient's mouth, that several demand utterance simultaneously and escape with difficulty in jerky, interrupted, often unintelligible sentences. In constant agitation (jactitation), the head and hands are moved abruptly in all directions whence the imaginary impressions seem to arise."

Magnan's form differs but little. Its principal distinctive feature is the rise of temperature which is apt to run high and reach 40°C. , (104°F.), or even 42°C. , (107.6°F.). This lasts without remission for two or three days or perhaps longer, and if not followed, as is usual, by a fatal result, gradually descends to the normal limit. This form also, is marked by the constant presence of muscular movements, subsultus tendinum, jerkings and contractions of the muscles all over the body and by the extreme muscular weakness which eventually results from this incessant activity. Lentz considers that the only symptom by which this form can be differentiated from that of Delasiauve is the possibility of prolonged remissions in which the consciousness may for a time become quite clear.

The presence of a high and continued fever during an attack of delirium tremens, is always a symptom of

most serious import. It denotes either the presence of some severe and dangerous complication, as pneumonia or meningitis, or it implies, as is thought to be the case at times, by certain authorities, an affection of the cerebral heat-centres, and thereby a wide-spread and dangerous condition of the cerebrum. In ordinary cases of delirium tremens, there is no rise of temperature whatsoever.

Näcke says: "In a series of examinations of a small number of cases (eleven), a slight feverishness could be determined in one-third of them. The maximum was 38.8°C. , 101°F. Any temperature above this, pointed to some internal inflammation, more especially pneumonia. In our cases a slight fever appeared in the evening only, as a slight rise of the physiological evening exacerbation of the temperature, never in the prodromal stage, commonly only on the first, rarely on the second day of the true delirium. Pulse and respiration were commonly only slightly increased in rate."

The cause of the fever in febrile delirium tremens is still doubtful. Magnan gives the results of five autopsies in which little definite was found beyond the injection and œdema of the cerebral meninges and a similar condition of the meninges of the spinal cord with injection of the gray substance of the latter. He himself, says that besides the hyperæmia, which sometimes ends in hæmorrhage and thus attests the very violent irritation of the nervous centres, we scarcely find at the autopsy anything except the more or less advanced alterations of chronic alcoholism.

That delirium tremens may be complicated by meningitis, is, of course, well-known, and many instances have been published, of which, however, I will only refer to the cases of Bonnemaison.

Whether such complication exists in any special

case, can, of course, only be decided after a careful consideration of all the symptoms.

Whether in the febrile cases ending in recovery, the fever is due to complications meningitic or otherwise, or whether it is simply due to the violence of the cerebral irritation and the affection of the cerebral heat-centres has not yet been proved. The evidence in favor of the latter condition is up to the present time wholly negative. Considering the existence of heat-centres, as shown by Dr. Ott and others, proved, since no other cause of the high temperature is apparent, and since cerebral irritation evidently exists, it is assumed that the fever is due to the irritation of these centres. It must be remembered, however, that this is only a theory with some plausibility in its favor.

Näcke is in favor of this view. As in Magnan's cases the temperature cannot be simply dependent on increased muscular action "since now at the autopsy of such patients, beyond the more or less marked hyperamia of the central nervous apparatus, and the changes produced in the system by chronic alcoholism, nothing was found which could explain the violent fever, we must in these cases regard the fever as directly dependent on the action of the lately introduced masses of alcohol upon the heat regulators."

We, however, do not believe that this question can yet be decided without further evidence.

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[Only a very few of the authorities who have written on this subject, can be mentioned, as the list is a very long one].

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